

Luiza Antonie

Curriculum Vitae

School of Computer Science
University of Guelph
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Canada

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Updated: August, 2016

RESEARCH INTERESTS	Data mining techniques and methodology for interdisciplinary and applied research with a focus on record linkage, classification and data integration	
ACADEMIC EMPLOYMENT	Assistant Professor School of Computer Science University of Guelph	July 2016-Present
	Research Associate Department of Economics and Finance University of Guelph	May 2014-June 2016
	Postdoctoral Fellow Department of Economics and Finance University of Guelph	Nov 2012-Apr 2014 Sep 2009-Oct 2011
EDUCATION	Ph.D. in Computing Science University of Alberta, Canada Thesis: Associative Classifiers: Improvements and Potential Advisors: Dr. Osmar R. Zaiane, Dr. Robert C. Holte	2008
	M.Sc. in Computing Science University of Alberta, Canada Thesis: Categorizing Digital Documents by Associating Content Features Advisor: Dr. Osmar R. Zaiane	2002
	B.Sc. in Electrical Engineering and Computer Science (English Stream) Politehnica University of Bucharest, Romania Thesis: Digital Mammography Classification Advisor: Dr. Rodica Tuduce	2000
GRANTS AND AWARDS	NSERC¹ Discovery Grant \$23 000/year <i>Project: Record Linkage across Heterogeneous Data Sources</i>	2014-2019
	OHCRIF Grant \$29 590 Ontario Human Capital Research and Innovation Fund, Canada <i>Project: Career Mobility and Returns to Post-Secondary Education in Canada</i> With Miana Plesca (Department of Economics and Finance, University of Guelph)	2015-2016
	Gender Wage Gap Grant , Pay Equity Office, Ontario, Canada \$22 222 <i>Project: The Male-Female Wage Gap in Ontario: Marked Differences by Education and Wage Quantiles</i> With Miana Plesca (Department of Economics and Finance, University of Guelph)	2015
	Google Faculty Research Award \$25 000 <i>Project: Creating Longitudinal Data From Census Records</i> With Kris Inwood (Department of Economics and Finance, University of Guelph)	2010

¹Natural Sciences and Engineering Research Council of Canada

Post-Doctoral Fellowship \$50 000/year <i>Project: Historical Record Linkage and Longitudinal Data</i> Ontario Ministry of Research and Innovation, Ontario, Canada	2009-2011
Alberta Ingenuity Studentship \$15 000/year Alberta Ingenuity Fund, Alberta, Canada	2003-2007
iCore Scholarship \$15 000/year iCore, Alberta, Canada	2003-2007
Alberta Ingenuity Studentship \$20 000/year Alberta Ingenuity Fund, Alberta, Canada	2002-2003

PUBLICATIONS

Journal Articles

- [1] Luiza Antonie, Kris Inwood, Daniel J. Lizotte, and J. Andrew Ross. Tracking people over time in 19th century Canada for longitudinal analysis. *Machine Learning*, 95:129–146, 2013 (10 citations).
- [2] Luiza Antonie and Kyrylo Bessonov. Biologically relevant association rules for classification of microarray data. *ACM SIGAPP Applied Computing Review*, 12(1):12–23, April 2012.

Journal Submissions Under Review

- [3] Luiza Antonie, Miana Plesca, and Jiayuan (Jennifer) Teng. The male-female wage gap in Ontario: Differences by jobs, education and income.
- [4] Laura Richards, Luiza Antonie, Gary Grewal, Shawki Areibi, and Kris Inwood. Disambiguating links in historical census record linkage.
- [5] Mateen Shaikh, Luiza Antonie, and Paul D. McNicholas. Standardizing interestingness measures for association rules.

Book Chapters

- [6] Luiza Antonie, Kris Inwood, and J. Andrew Ross. Dancing with dirty data: Problems in the extraction of life-course evidence from historical censuses. In *Population Reconstruction*. Springer International Publishing, 2015 (1 citation).
- [7] Luiza Antonie, Peter Baskerville, Kris Inwood, and J. Andrew Ross. Change amid continuity in Canadian work patterns during the 1870s. In *Lives in Transition: Longitudinal Perspectives from Historical Sources*. 2015 (1 citation).
- [8] Luiza Antonie, Jundong Li, and Osmar R. Zaiane. Negative association rules. In Charu Aggarwal and Jiawei Han, editors, *Frequent Pattern Mining*, pages 135–145. 2014.
- [9] Luiza Antonie, David Chodos, and Osmar R. Zaiane. Variations on associative classifiers and classification results analyses. In *Post-Mining of Association Rules: Techniques for Effective Knowledge Extraction*. 2009 (2 citations).
- [10] Maria-Luiza Antonie, Osmar R. Zaiane, and Alexandru Coman. *Mining Multimedia and Complex Data (LNAI 2797)*, chapter Associative Classifiers for Medical Images, pages 68–83. Springer-Verlag, 2003 (73 citations).

Refereed Conferences

- [11] Luiza Antonie, Osmar R. Zaiane, and Robert C. Holte. Redundancy reduction: Does it help associative classifiers? In *Conference Proceedings of ACM-SAC, Track on Data Mining (DM)*, 2016.
- [12] Luiza Antonie, Andrew D'Angelo, Gary Grewal, and Miana Plesca. Analyzing the gender wage gap in ontario's public sector. In *Proceedings of IEEE International Conference on Machine Learning and Applications*, 2015.
- [13] Luiza Antonie, Peter Baskerville, Lisa Dillon, Kris Inwood, Evan Roberts, and Catalina Torres. Social mobility in canada, great britain, and the united states, 1850-1911: Methodological challenges. In *Tenth European Social Science History Conference*, Vienna, 2014.
- [14] J. Andrew Ross and Luiza Antonie. Four generations of census transcription: A comparison. In *36th Annual Meeting of the Social Science History Association*, Boston, 2011.
- [15] Luiza Antonie and Kyrylo Bessonov. Classifying microarray data with association rules,. In *ACM-SAC 2011 Conference Track on Bioinformatics and Computational Systems Biology (BIO)*, TaiChung, Taiwan, March 2011 (Best paper award in the Applications track, 4 citations).
- [16] Luiza Antonie, Peter Baskerville, Kris Inwood, and Andrew Ross. Labour market transitions during the 1870s. In *35th Annual Meeting of the Social Science History Association*, Chicago, 2010.
- [17] Abhishek Srivastava, Osmar R. Zaiane, and Maria-Luiza Antonie. Feature space enrichment by incorporation of implicit features for effective classification. In *Eleventh International Database Engineering and Applications Symposium (IDEAS 2007)*, Banff, Canada, September 2007.
- [18] Maria-Luiza Antonie, Osmar R. Zaiane, and Robert C. Holte. Learning to use a learned model: A two-stage approach to classification. In *Proceedings of IEEE International Conference on Data Mining*, 2006 (39 citations).
- [19] Osmar R. Zaiane and Maria-Luiza Antonie. On pruning and tuning rules for associative classifiers. In *Proceedings of International Conference on Knowledge-Based Intelligence Information & Engineering Systems (KES'05)*, pages 966–973, 2005 (41 citations).
- [20] Rafal Rak, Wojciech Stach, Osmar R. Zaiane, and Maria-Luiza Antonie. Considering re-occurring features in associative classifiers. In *Proceedings of the 9th Pacific-Asia Conference on Advances in Knowledge Discovery and Data Mining*, pages 240–248, 2005 (25 citations).
- [21] Maria-Luiza Antonie and Osmar R. Zaiane. Mining positive and negative association rules: An approach for confined rules. In *8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD 04)*, pages 27–38, Pisa, Italy, 2004 (187 citations).
- [22] Osmar R. Zaiane and Maria-Luiza Antonie. Classifying text documents by associating terms with text categories. In *Proceedings of Australasian Database Conference (ADC'02)*, pages 215–222, 2002 (135 citations).
- [23] Maria-Luiza Antonie and Osmar R. Zaiane. Text document categorization by term association. In *Proceedings of IEEE International Conference on Data Mining*, pages 19–26, 2002 (144 citations).

Refereed Workshops

[24] Laura Richards, Luiza Antonie, Shawki Areibi, Gary Grewal, Kris Inwood, and J. Andrew Ross. Comparing classifiers in historical census linkage. In *Data Integration and Applications Workshop Proceedings, in conjunction with IEEE ICDM*, Shenzhen, China, 2014.

[25] Maria-Luiza Antonie and Osmar R. Zaïane. An associative classifier based on positive and negative rules. In *9th ACM SIGMOD Workshop on Research Issues in Data Mining and Knowledge Discovery (DMKD-04)*, pages 64–69, Paris, France, 2004 (109 citations).

[26] Osmar R. Zaïane, Maria-Luiza Antonie, and Alexandru Coman. Mammography classification by an association rule-based classifier. In *Third International ACM SIGKDD Workshop on Multimedia Data Mining (MDM/KDD'2002) in conjunction with Eighth ACM SIGKDD*, pages 62–69, Edmonton, Alberta, Canada, July 2002 (124 citations).

[27] Maria-Luiza Antonie, Osmar R. Zaïane, and Alexandru Coman. Application of data mining techniques for medical image classification. In *In Proceedings of Second International Workshop on Multimedia Data Mining (MDM/KDD'2001) in conjunction with Seventh ACM SIGKDD*, pages 94–101, 2001 (307 citations).

Theses

[28] Luiza Antonie. *Associative Classifiers: Potential and Improvement*. PhD thesis, University of Alberta, 2008.

[29] Maria-Luiza Antonie. Categorizing digital documents by associating content features. Master's thesis, University of Alberta, 2002.

INVITED TALKS
AND
PRESENTATIONS

Creating Longitudinal Data: Challenges and Solutions 2016
Text Analysis and Machine Learning Seminar, University of Ottawa, Canada

Comparing Classifiers in Historical Census Linkage 2014
Data Integration and Applications Workshop in conjunction with IEEE ICDM, Shenzhen, China

Data Mining and Association Rules 2013
Invited Talk in CS886: Advanced Topics in Artificial Intelligence: Applied Machine Learning
David R. Cheriton School of Computer Science, University of Waterloo

An Automated Record Linkage System Linking 1871 Canadian Census to 1881 Canadian Census 2011
Internal Department Seminar, Department of Economics and Finance, University of Guelph

An Automated Record Linkage System Linking 1871 Canadian Census to 1881 Canadian Census 2010
Workshop on Longitudinal Analysis, Historical Sources and Generational Change, Guelph, Canada

Associative Classifiers: Improvements and Potential 2008
Graduate Seminar, Department of Computing Science, University of Alberta, Canada

- Learning to Use a Learned Model: A Two-Stage Approach to Classification** 2006
The Sixth IEEE International Conference on Data Mining (ICDM'06), Hong Kong, China
- Extensions to an Associative Classifier** 2005
Database & Data Mining Lab Seminars at Simon Fraser University, Vancouver, Canada
- Mining Positive and Negative Association Rules: An Approach for Confined Rules** 2004
8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD 04), Pisa, Italy
- Mining Thick Skylines over Large Databases** 2004
8th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD'04), Pisa, Italy
Presented on behalf of Wen Jin, Jiawei Han and Martin Ester
- Classification in the Presence of Rare Classes** 2004
1st Database Workshop, University of Alberta, Canada
- Text Document Categorization by Term Association** 2002
IEEE International Conference on Data Mining (ICDM'2002), Maebashi City, Japan
- Mammography Classification by an Association Rule-Based Classifier** 2002
Third Intl. ACM SIGKDD Workshop on Multimedia Data Mining (MDM/KDD'2002, Edmonton, Alberta, Canada
- Categorizing Digital Documents by Associating Content Features** 2002
Joint Meeting of Database Groups at University of Alberta and University of Calgary, Canada
- Categorizing Digital Documents by Associating Content Features** 2002
Graduate Seminar, Department of Computing Science, University of Alberta, Canada
- TEACHING EXPERIENCE**
- Sessional Lecturer** Winter 2016
ECON2740 - Economics Statistics
Department of Economics and Finance
University of Guelph
- Sessional Lecturer** Summer 2015
CIS6660 - Data Integration and Data Mining - Reading Course
School of Computer Science
University of Guelph
- Sessional Lecturer** Fall 2014
ECON2740 - Economics Statistics
Department of Economics and Finance
University of Guelph
- Sessional Lecturer** Summer 2010
CIS6650 - Knowledge Discovery and Data Mining
School of Computer Science
University of Guelph
- Sessional Lecturer** Jan-Aug 2009
CS100 - Introduction to Computing

David R. Cheriton School of Computer Science
University of Waterloo

SUPERVISION

Graduate Students

Shada Zarti, School of Computer Science, University of Guelph
Co-supervisor: Dr. Gary Grewal (School of Computer Science)
MSc. start date Summer 2015

Harshavardhan Gadgil, School of Computer Science, University of Guelph
Co-supervisor: Dr. Gary Grewal (School of Computer Science)
MSc. start date Summer 2015

Andrew D'Angelo, School of Computer Science, University of Guelph
Co-supervisor: Dr. Gary Grewal (School of Computer Science)
Thesis: Gender Wage Gap Analysis
M.Sc. Graduated Summer 2016

Laura Richards, School of Computer Science, University of Guelph
Co-supervisors: Dr. Gary Grewal (School of Computer Science) and Dr. Shawki Areibi (School of Engineering)
Thesis: "Disambiguating Multiple Links in Historical Record Linkage"
M.Sc. Graduated Fall 2013

Undergraduate Students

Jason Teitelbaum (Co-op Student) Summer 2016
School of Computer Science, University of Guelph
Project: Developing a data-driven website for The Male-Female Wage Gap in Ontario

Vanessa Carneiro Ferreira Summer 2015
School of Computer Science, University of Guelph
Project: Analyze Errors in Data Transcription and Digitization from Historical Records

Rodrigo Lopes de Carvalho Summer 2015
School of Computer Science, University of Guelph
Project: Create a User Interface and Website for Gender Wage Gap Project

Eduardo Rodrigues Duarte Neto Summer 2015
School of Computer Science, University of Guelph
Project: Linking WWI Canadian Soldiers Data

Elnaz Baradaran Shokouhi (USRA) Summer 2014
School of Engineering, University of Guelph
Project: Integrating Historical Documents

Research Project Supervision

Andrew D'Angelo (Undergraduate student) Winter 2015
School of Computer Science, University of Guelph

Kyrylo Bessonov (M.Sc. student) 2010
School of Computer Science, University of Guelph
Published in proceedings of ACM-SAC BIO'11 (best paper award) and in ACM SIGAPP ACR journal

Rafal Rak (M.Sc. student) 2004
 Department of Electrical Engineering, University of Alberta
 Published in proceedings of PAKDD'05

Wojciech Stach (M.Sc. student) 2004
 Department of Electrical Engineering, University of Alberta
 Published in proceedings of PAKDD'05

PhD External Examiner

Zhichun Fu (PhD candidate) - External examiner 2014
 College of Engineering and Computer Science
 Australian National University

Graduate Committee Membership

Mateen Shaikh (PhD candidate) - Member of supervisory committee 2013
 Department of Mathematics and Statistics, University of Guelph

TEAM PROJECTS

Mining Microdata: Economic Opportunity and Spatial Mobility in Britain, Canada and the United States, 1850-1911 2012-2014

This project investigated levels of social mobility in Canada, Great Britain and the United States from 1850 to 1911. Mining Microdata project was funded as part of an international competition, **Digging into Data**, to support collaborative research with digital sources in the humanities and social sciences.

Research team: Peter Baskerville (University of Alberta), Lisa Dillon (University of Montréal), Kris Inwood (University of Guelph), Luiza Antonie (University of Guelph), Evan Roberts (University of Minnesota), Steven Ruggles (University of Minnesota), Kevin Schürer (University of Leicester), Jaideep Srivastava (University of Minnesota), Rebecca Vick (University of Minnesota), John Robert Warren (University of Minnesota), Matthew Woollard (University of Essex)

KDD Cup Competition (Knowledge Discovery and Data Mining) 2002

University of Alberta Team: Luiza Antonie, Samer Nassar, Joerg Sander, Osmar Zaiane

Task to be researched and solved: Yeast Gene Regulation Prediction. I had a major role in researching and completing this task.

Ranked 6th out of 54 participating teams (ranked 1st among the 6 Canadian teams).

ACADEMIC SERVICE

Conference Organizer

Organizer for 3rd Workshop on Data Integration and Applications (DINA) at IEEE ICDM 2016

Organizer for 2nd Workshop on Data Integration and Applications (DINA) at IEEE ICDM 2015

Organizer for Gender Wage Gap Workshop at University of Guelph 2015

Organizing Chair for Ontario Celebration of Women in Computing 2014

Organizer for 1st Workshop on Data Integration and Applications (DINA) at IEEE ICDM 2014

Organizer for the Workshop for Women in Machine Learning (WiML) 2008

Program Committee Member

Conference on Knowledge Discovery and Data Mining (ACM SIGKDD), 2016
International Conference on Data Mining (ICDM), 2007, 2010, 2011, 2013, 2014, 2015
European Conference on Machine Learning and Principles and Practice of Knowledge
Discovery in Databases (ECML/PKDD) Nectar Track, 2015
AAAI Demonstrations Track, 2016
ACM-SAC Conference Track on Bioinformatics and Computational Systems Biology,
2010, 2011, 2014, 2015, 2016
First Workshop on Population Informatics for Big Data, 2015
Workshop for Women in Machine Learning (WiML), 2009

Journal Reviewer

IEEE Transactions on Knowledge and Data Engineering (TKDE) journal (since 2015)
Data Mining and Knowledge Discovery (DMKD) journal (since 2009)
Data & Knowledge Engineering (DKE) journal (since 2005)
Knowledge and Information Systems (KAIS) journal (since 2005)